

**Abstract**

A communication system is specified for the transmission of optical signals which are transmitted in wavelength-division multiplex with different wavelengths via optical fibres. In at least one network node of the communication system, there exist at least one line unit (2) to which the optical fibres (1) are connected, and a cross-connector (6). The cross-connector (6) is connected to the line unit (2) via optical interfaces and signals of the same wavelength are fed in each case by the line unit (2) to two inputs of the cross-connector (6) or are delivered to the line unit (2) by two outputs of said cross-connector. Only one of the corresponding transmission paths is used in each case. In order to reduce the number of colour lasers (4) in the line unit (2), signals of each wavelength are delivered by the line unit (2) on one path only to a passive splitter (7), which doubles the respective signal and feeds it on separate paths to the two inputs of the cross-connector (6). In the opposite direction in each case two outputs of the cross-connector (6) are fed on separate paths to a coupler (8), via which the two paths are combined into one transmission path which is connected to one input of the line unit (2) to which a colour laser (4) corresponding to the respective wavelength of the optical signals is connected.

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